

Surname		Centre Number	Candidate Number
Other Names			0



GCSE

4370/04

MATHEMATICS – LINEAR
PAPER 2
FOUNDATION TIER

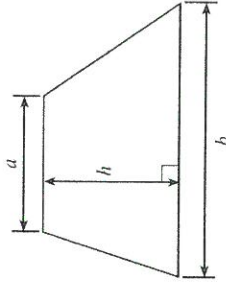
A.M. TUESDAY, 10 November 2015
1 hour 45 minutes



A15-4370-04

C D C F G
60 48 37 25 14

$$\text{Area of trapezium} = \frac{1}{2}(a + b)h$$



Formula List

For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1.	10	10
2.	6	16
3.	4	20
4.	5	25
5.	6	31
6.	6	32
7.	10	47
8.	8	55
9.	7	62
10.	5	67
11.	8	75
12.	4	79
13.	7	86
14.	8	94
15.	6	100
Total	100	

← G
← F
← E
← D
← C

ADDITIONAL MATERIALS

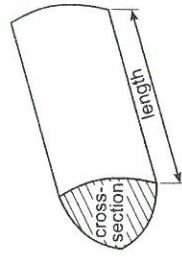
A calculator will be required for this paper.
A ruler, a protractor and a pair of compasses may be required.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen.
Write your name, centre number and candidate number in the spaces at the top of this page.
Answer **all** the questions in the spaces provided.
Take π as 3.14 or use the π button on your calculator.

INFORMATION FOR CANDIDATES

You should give details of your method of solution when appropriate.
Unless stated, diagrams are not drawn to scale.
Scale drawing solutions will not be acceptable where you are asked to calculate.
The number of marks is given in brackets at the end of each question or part-question.
You are reminded that assessment will take into account the quality of written communication (including mathematical communication) used in your answer to question 5.



$$\text{Volume of prism} = \text{area of cross-section} \times \text{length}$$

1. (a) Toby buys the following items to decorate some rooms in his house. Complete his bill. [4]

Item	Cost
10 rolls of wallpaper at £14.82 each	£ 148.20
4 cartons of wallpaper paste at £7.53 per carton	£ 30.12
6 tins of emulsion paint at £8.32 each	£ 49.92
4 tins of gloss paint at £14.54 each	£ 58.16
Total	£ 286.40

- (b) Toby gets a 5% discount on his bill. How much does he pay? [3]

$$\text{discount} = 0.05 \times 286.40 = £14.32$$

$$\text{Toby pays} = 286.40 - 14.32 = £272.08$$

- (c) Toby goes to a cafe and buys a cup of tea, a sandwich and a cake. How much change does he get from £6? [3]

Cafe	
Tea	£1.56
Coffee	£2.35
Sandwich	£2.86
Cake	98p

$$6 - 1.56 - 2.86 - 0.98$$

$$= £0.60$$

$$0 - 60p$$

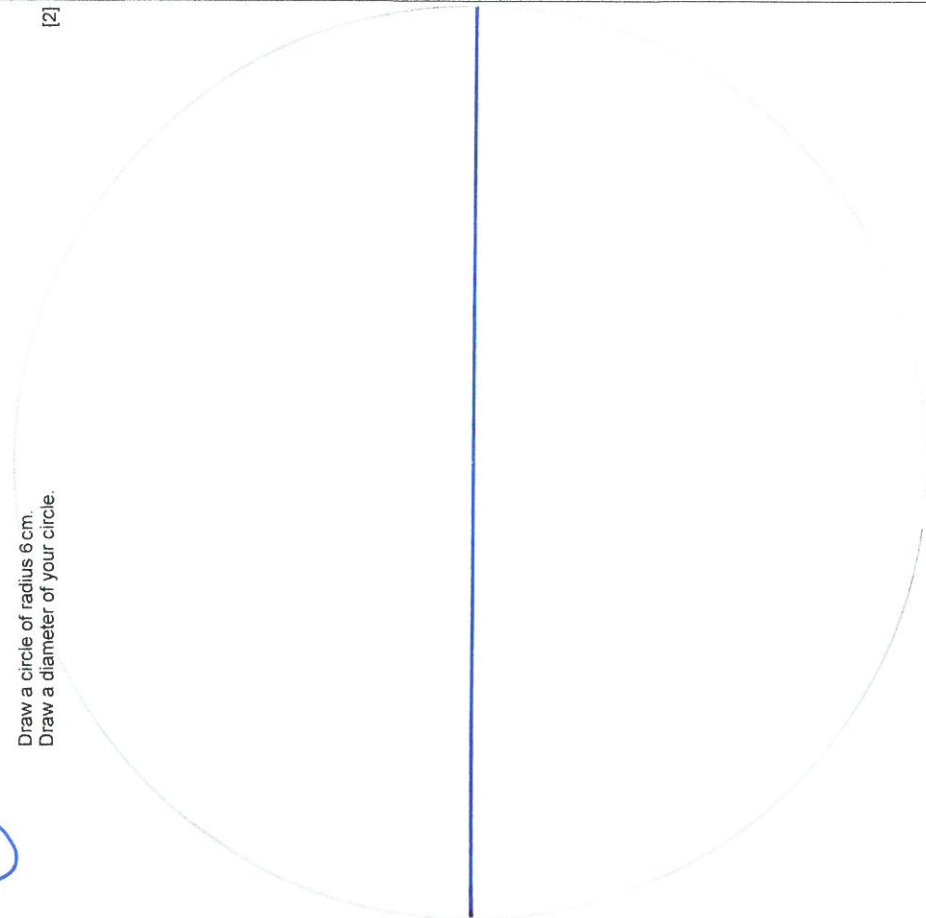
2. (a) Circle the quantity that is an appropriate estimate for each of the following. [4]

Height of a door	2m	20m	2mm	2cm
Weight of a baby	3g	3mg	30kg	3kg
Volume of tea in a full mug	3 litres	30 cm ³	300 ml	30 ml
Area of a bedroom floor	12 m ²	12 cm ²	12 mm ²	12 cm ³

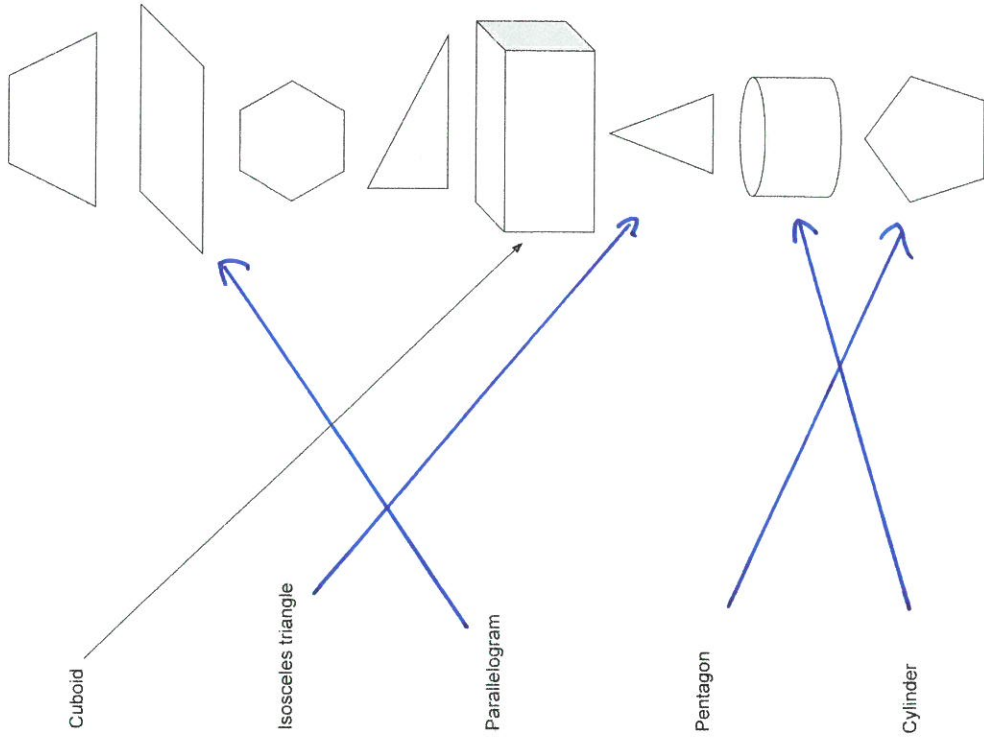
- (b) In the space below:

Draw a circle of radius 6 cm.
Draw a diameter of your circle.

[2]



3. Draw a line connecting each of the following words to the correct shape.
The first one has been done for you.



Examiner only

[4]

151

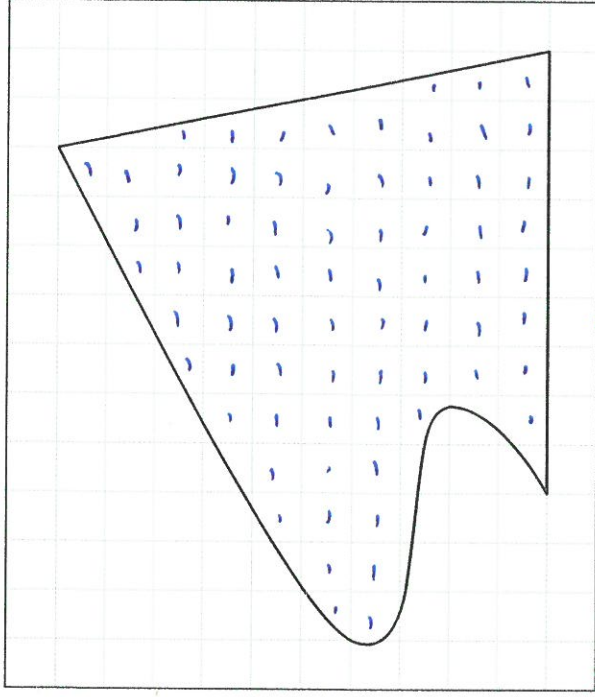
151

151

151

040005
4370

4. (a)



The above shape is the outline of a sheet of cardboard.
It is drawn on a square grid where each square represents 5 cm^2 .
Estimate the area of the surface of the sheet of cardboard.

[3]

Count squares at least half covered

$$71 \text{ squares} \times 5 = 355$$

Area of the surface of the sheet of cardboard = 355 cm^2

M1

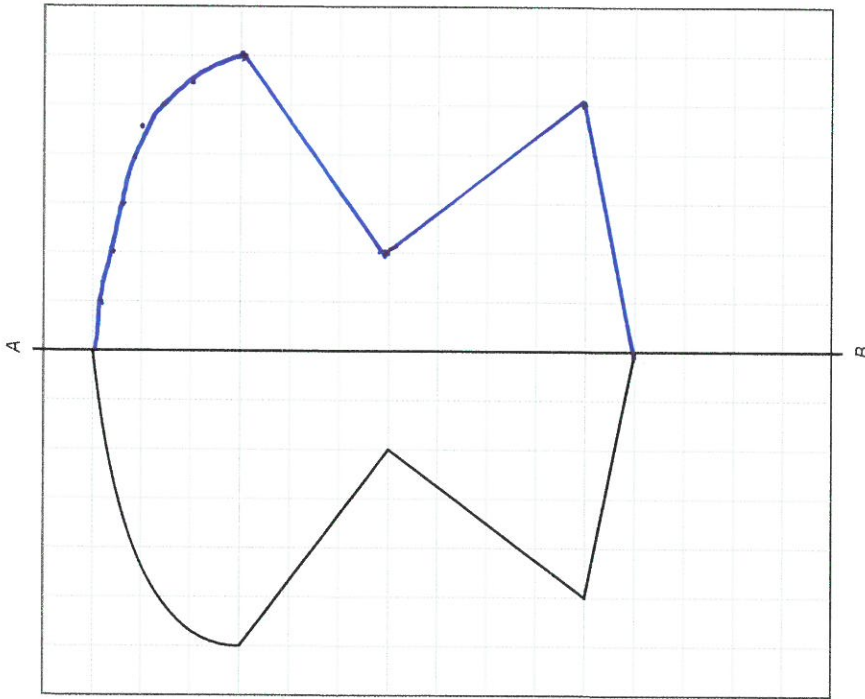
67-73ok

A1

A1

Examiner only

- (b) Complete the following figure so that it is symmetrical about the line AB.



B1 B1

040007 4370

5. You will be assessed on the quality of your written communication in this question.
Peter has these nine coins.



He spends £1.78 in a shop.
Peter pays using some of his coins and he is given change.
Including his change, he has exactly four coins left.

List the coins he used to pay and list the coins he had left. [6]

£1, 50p, 20p, 5p, 2p, 2p = £1.79

leaving him 3 coins and he will get
an additional 1p coin change.

S1 B1 B1 B1

Coins he used to pay

£1, 50p, 20p, 5p, 2p, 2p

Coins he had left

£1, 10p, 5p, 1p

Q2

6. The lengths, in cm, of 8 pieces of wood are:

56 45 56 61 74 36

- (a) Find the median of their lengths.

36, 45, 56, 61, 74, 77, 87, 110
 61 + 74 = 135 $\div$ 2 = 67.5 cm

- (b) Find the mean of their lengths.

Total = 546

Mean = $546 \div 8 = 68.25$

- (c) Find the range of their lengths.

$110 - 36 = 74$

Examiner only

[2]

M1

A1

[3]

M1

M1

A1

[1]

B1

Examiner only

7. (a) Describe in words the rule for continuing each of the following sequences.

(i) 98 86 74 62 50

Rule:

Subtract 12 from previous number.

(ii) 1 5 25 125 625

Rule:

Multiply previous number by five.

- (b) Find the values of

(i) $\sqrt{1.44}$

1.2

(ii) $5 \cdot 2^3$

140.608

- (c) Express 9% as a decimal.

0.09

- (d) Chris has £10. He goes into a shop to buy notebooks at 68p each. What is the greatest number of notebooks he can buy and what is his change?

$10 \div 0.68 = 14.7 \dots$

So 14 notebooks cost £9.52

Change 48p

- (e) Calculate $\frac{4}{9}$ of 63.

$\frac{4}{9} \times 63 = 28$

Examiner only

[1]

B1

[1]

B1

[1]

B1

[1]

B1

[1]

B1

M1

A1

A1

[2]

M1

A1

8. (a) Simplify $a + 3b + a - 4b$.

$$2a - 1b$$

- (b) Rebecca thinks of a number. She multiplies the number by 4 and subtracts 7 to get 41. What was her number?

$$10 \div 4 \rightarrow -7 \rightarrow 41$$

$$50 \div 4 \leftarrow +7 \leftarrow 50$$

- (c) An apple and a pear are placed on a scale, as shown in Diagram 1. Another apple is added to the scale, as shown in Diagram 2. Both apples have the same weight. What is the weight of the pear?

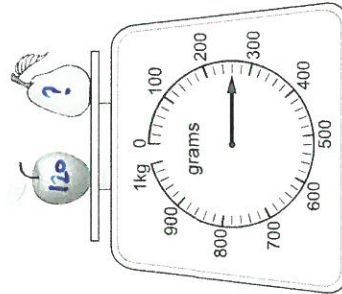


Diagram 1

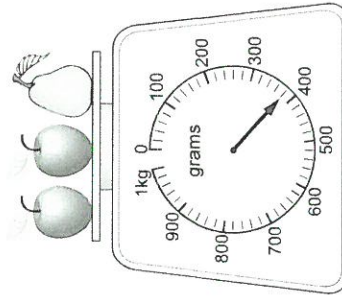


Diagram 2

$$120 \div 2 = 60$$

$$380 - 60 = 320$$

$$320 - 60 = 260$$

$$260 - 120 = 140$$

9. (a) Mr & Mrs Hughes received an electricity bill. The bill, with some of the entries missing, is shown below. Use the information given on the bill to complete all of the missing entries and calculate the total amount that Mr & Mrs Hughes have to pay. [5]

Power Electricity Company

Bill period 1st July 2015 to 30th September 2015

Mr & Mrs Hughes
5 Field Close
Porth
XX2 3YY

INVOICE

Meter reading this time	Meter reading previous time	Units used	Price of each unit in pence	Amount
4703	3425	1278	18.5p	£236.43
		$\times 10.175$		11.82
				248.25
				12.46
				£260.71

Total charge including V.A.T.

Previous amount owing

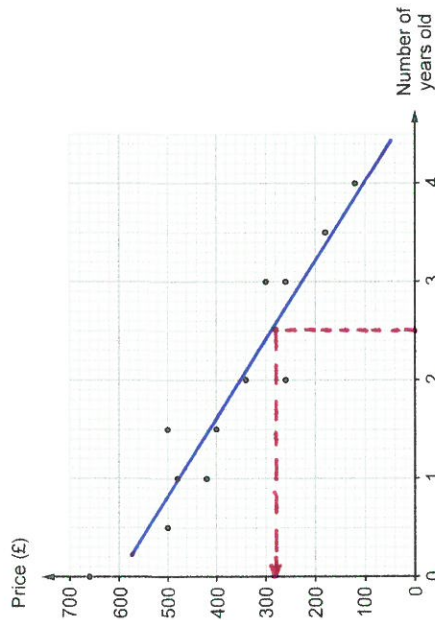
Amount to pay

- (b) They wish to pay the bill in 3 equal monthly payments. How much should each of these monthly payments be? Give your answer correct to the nearest penny. [2]

$$260.71 \div 3 = 86.90$$

Space for any extra working:

10. The scatter diagram shows the price and age for each of 12 scooters of the same make and model.



- (a) Write down the price of the new scooter.

£660

- (b) Write down the price of the oldest scooter.

£120

- (c) Draw, by eye, a line of best fit on the scatter diagram.

- (d) Write down the type of correlation shown by the scatter diagram.

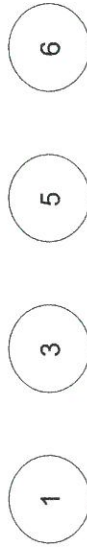
negative

- (e) Estimate the price of a $2\frac{1}{2}$ year old scooter of the same make and model.

£280

11. Stephen and Gwen play a game using four discs with a positive whole number on each disc. The discs are placed in a bag. Stephen selects a disc from the bag at random. He writes down the number on the disc and replaces the disc in the bag. Gwen now does the same and they then add together the two numbers they obtained. If the numbers add up to give an even number, then Stephen wins, otherwise Gwen wins.

- (a) The numbers on the discs are



Who is more likely to win this game?
Give full details of your reasoning.

(S)

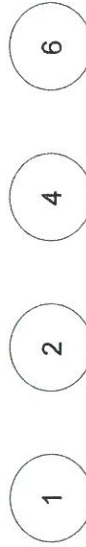
6	7	9	11	12
5	6	8	10	11
3	4	6	8	9
1	2	4	6	7
	1	3	5	6

$P(\text{Even}) = \frac{10}{16}$

$P(\text{Odd}) = \frac{6}{16}$

Stephen is more likely to win

- (b) The numbers on the discs are changed, as shown below.



Is this game fair?

Give full details of your reasoning.

(S)

6	7	8	10	12
4	5	6	8	10
2	3	4	6	8
1	2	3	5	7
	1	2	4	6

$P(\text{Even}) = \frac{10}{16}$

$P(\text{Odd}) = \frac{6}{16}$

still not fair

- (c) (i) Choose four numbers of your own so that the game is fair.



2 x even, 2 x odd

$$P(\text{even}) = \frac{8}{16}$$

$$P(\text{odd}) = \frac{8}{16}$$

4	5	6	7	8
3	4	5	6	7
2	3	4	5	6
1	2	3	4	5

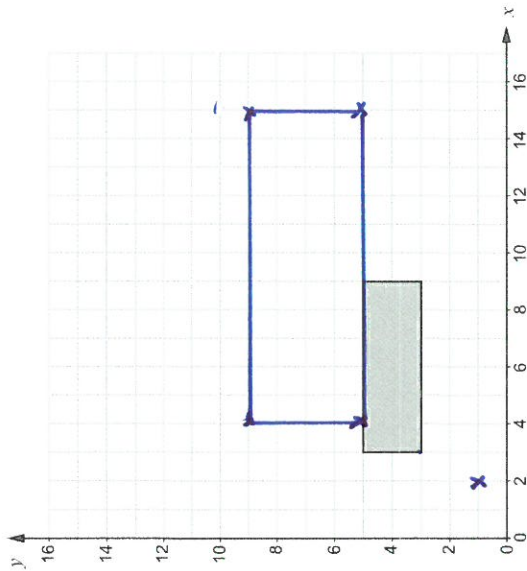
1 2 3 4

- (ii) State the rule for your choice of numbers on the discs so that the game is fair. [1]
- The game number of odd n° is even n°.

B1

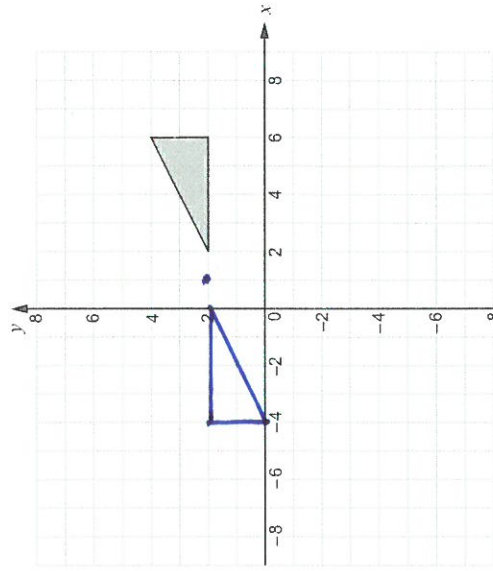
E1

12. (a) Enlarge the rectangle shown by a scale factor of 2, using (2, 1) as the centre of the enlargement. [2]



B1
B1

- (b) Rotate the triangle shown below through 180° about the point (1, 2). [2]



B1
B1

13.

Buy your holiday money here	
	192.45 Icelandic krona
£1 buys	100.32 Indian rupees
	53.67 Russian rubles

Use the exchange rates in the table to answer the following questions.

- (a) Exchange £350 into Icelandic krona.

$$350 \times 192.45 = 67357.50$$

M1

Icelandic krona

- (b) How much money, in £, would be needed to buy 2608.32 Indian rupees?

$$2608.32 \div 100.32$$

M1

$$26$$

A1

- (c) Complete the sentence below.

'100 Russian rubles are worth the same amount as Icelandic krona.'

$$\text{rubles into £s: } 100 \div 53.67 = £1.86$$

B1

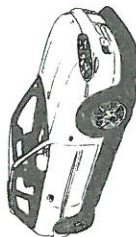
$$£1 \text{ into krona: } 1.86 \times 192.45 = 358.58 \text{ krona}$$

M1

A1

Turn over.

14.



Rowena owns a car that Dafydd is planning to buy in 3 years' time.

Rowena's car is currently worth £3500.

Rowena estimates that her car will repeatedly depreciate by 24% of its value each year.

Dafydd has already saved £100.

Dafydd wants to set up a savings account to save a fixed amount of money each month to buy Rowena's car in 3 years' time.

- (a) What would be the minimum amount of money, to the nearest pound, that Dafydd should pay into his savings account each month?
You must show all your working.

[7]

Find the value of Rowena's car:

$$\begin{aligned} \text{after 1 year: } & 0.24 \times 3500 = £840 \\ \text{car worth} & = 3500 - 840 = £2660 \end{aligned}$$

M2

$$\begin{aligned} \text{after 2 yrs: } & 0.24 \times 2660 = £638.40 \\ \text{car worth} & = 2660 - 638.40 = £2021.60 \end{aligned}$$

$$\begin{aligned} \text{after 3 yrs: } & 0.24 \times 2021.60 = £485.18 \\ \text{car worth} & = 2021.60 - 485.18 = £1536.42 \end{aligned}$$

A1

$$\text{So Dafydd needs to save } 1536.42 - 100 = £1436.42$$

36 monthly saves

$$1436.42 \div 36 = 39.90$$

So he needs to save £40 a month.

A1

A1

M1

Examiner
only

- (b) Do you think that this amount saved each month will guarantee that Dafydd will have enough money to buy Rowena's car?
You must give a reason for your answer.

[1]

Yes, because he will also earn interest on his savings, so will end up with more money.

E1

Examiner
only

15. (a) Expand $5y(2y^2 - 3)$.

[2]

$$10y^3 - 15y$$

B1

B1

- (b) Simplify $4h^3 \times 5h^2$.

[1]

$$20h^5$$

B1

- (c) Find all integers n that satisfy the inequality $6 < 2n < 13$.

[3]

$$6 < 2n < 13$$

$$\div 2$$

$$3 < n < 7.5$$

M1

$$4, 5, 6, 7$$

A2

END OF PAPER

$$y \times y \times y \quad h \times h \times h \times h \times h$$

PAPER 2 - FOUNDATION TIER

2015 November Paper 2 (Calculator allowed) Foundation Tier	Marks	FINAL MARK SCHEME Comments																								
1. (a) (148.20) 30.12 (paste) 49.92 (e paint) 58.16 (g paint) (£) 286.4(0) (b) $10\% = 28.64$ $5\% = 14.32$ OR $(0).05 \times 286.4(0)$ Discount = (£) 14.32 He pays (£)272.08 (c) Cost = (£)1.56 + (£)2.86 + 98(p) OR (£)6 – (£)1.56 – (£)2.86 – (£)0.98 = (£)5.4(0) Change = 60(p) OR (£0).6(0)	B1 B1 B1 B1 M1 A1 A1 M1 A1 B1 10	F.T. their figures For any correct method for finding 5% F.T. 'their total'. Ignore extra decimal places. F.T. 'their total – their discount' <i>Alternative:</i> $0.95 \times \text{their } 286.4(0)$ M2 He pays (£)272.08 A1 M0, A0 if coffee used instead of tea, but B1 is possible. F.T. 'their £5.40', but B0 if more than £6 Accept £(0).60p B0 for (0).60p. Unsupported (0).60p gets M0,A0,B0																								
2. (a) <table><tr><td>Height</td><td><u>2 m</u></td><td>20 m</td><td>2 mm</td><td>2 cm</td></tr><tr><td>Weight</td><td>3 g</td><td>3 mg</td><td>30 kg</td><td><u>3 kg</u></td></tr><tr><td>Volume</td><td>3 litres</td><td>30 cm³</td><td><u>300 ml</u></td><td>30 ml</td></tr><tr><td>Area</td><td><u>12 m²</u></td><td>12 cm²</td><td>12 mm²</td><td>12 cm³</td></tr></table> (b) Circle radius 6cm ± 2mm Diameter drawn <table><tr><td></td><td></td></tr><tr><td>Too long B0</td><td>No labels B0</td></tr></table> If right hand diagram is labelled correctly e.g. diameter and/or radius OR 12cm and /or 6cm then B1	Height	<u>2 m</u>	20 m	2 mm	2 cm	Weight	3 g	3 mg	30 kg	<u>3 kg</u>	Volume	3 litres	30 cm ³	<u>300 ml</u>	30 ml	Area	<u>12 m²</u>	12 cm ²	12 mm ²	12 cm ³			Too long B0	No labels B0	B1 B1 B1 B1 B1 B1 6	Continuous line that is drawn with a pair of compasses or good attempt free hand. FT their circle (including free hand circles) Mark intention to draw through the centre ± 2mm Unambiguous line
Height	<u>2 m</u>	20 m	2 mm	2 cm																						
Weight	3 g	3 mg	30 kg	<u>3 kg</u>																						
Volume	3 litres	30 cm ³	<u>300 ml</u>	30 ml																						
Area	<u>12 m²</u>	12 cm ²	12 mm ²	12 cm ³																						
Too long B0	No labels B0																									
3. Isosceles triangle Parallelogram Pentagon Cylinder	B1 B1 B1 B1 4																									
4. (a) Evidence of square counting 67 – 73 335 – 365 (b) Lines Curve	M1 A1 B1 B1 B1 5	Inclusive. Inclusive. F.T. 'their 67 – 73' × 5 Unsupported answers in the range 335 – 365 get all 3 marks. Condone square notation, e.g. 70², but 70² = 4900 gets A0 For all 3 lines. F.T. their lines, must have opposite curvature, start at the correct place and end at the start of their top line.																								

2015 November Paper 2 (Calculator allowed) Foundation Tier	Marks	FINAL MARK SCHEME Comments
5. Condone notation such as .02p for 2p, .20p for 20p etc Must give 6 coins and get one back in change Total of coins = £2.94 OR 294p (Spent = £ 1.78 OR 178p) Coins = £1, 50p, 20p, 5p, 2p, 2p (Change of 1p) OR B1 for Amount left = £1.16 OR £1.14 + 2p change Coins = £1, 10p, 5p, 1p <u>Allow the use of a coin to pay that is then given back in change: e.g. 7 coins £1, 50p, 20p, 5p, 5p, 2p and 2p which amounts to £1.84 and then gives the change as 1p and 5p.</u> Look for (in the most part) Strand 1: For 1 mark Candidates will be expected to • present their response in a structured way • explain to the reader what they are doing at each step of their response • lay out their explanations and working in a way that is clear and logical • write a conclusion that draws together their results and explains what their answer means Strand 2: For 1 mark Candidates will be expected to • show all their working • make few, if any, errors in spelling, punctuation and grammar • use correct mathematical form in their working • use appropriate terminology, units, etc	S1 B1 B1 B1 QWC 2 6	OR Attempt at trialling to pay total coins >£1.78 & state change 2nd trial total coins >£1.78 & state correct change Coins = £1, 50p, 20p, 5p, 2p, 2p (Change of 1p) Coins = £1, 10p, 5p, 1p A correct solution is awarded B4 QWC2 Presents relevant material in a coherent and logical manner, using acceptable mathematical form, and with few if any errors in spelling, punctuation and grammar. QWC1 Presents relevant material in a coherent and logical manner but with some errors in use of mathematical form, spelling, punctuation or grammar. OR Evident weaknesses in organisation of material but using acceptable mathematical form, with few if any errors in spelling, punctuation and grammar. QWC0 Evident weaknesses in organisation of material, and errors in use of mathematical form, spelling.
6. (a) 36 45 56 <u>61 74</u> 77 87 110 Median = (135/2) = 67.5 (cm) (b) Sum of the numbers (546) Sum/8 Mean = 68.25 (cm) <u>I.S.W.</u> (c) (Range =) 74 (cm)	M1 A1 M1 M1 A1 B1 6	For identifying the correct TWO middle numbers OR for arranging the 8 numbers in ascending or descending order. C.A.O. Unsupported 67.5 gets M1, A1. For attempt to add all the numbers For dividing a number in the range 436 to 656 by 8. C.A.O.
7. (a) (i) Subtract 12 from the previous term (ii) Multiply previous term by 5 (b) (i) <u>1.2(0)</u> (ii) 140.6<u>(08) I.S.W.</u> (c) (0) .09 (d) 1000/68 <u>OR 10/0.68 OR 14.(705...)</u> He can buy 14 notebooks . Change = 1000 – 14×68 = 48p OR (£0).48 (e) $\frac{4}{9} \times 63$ = 28	B1 B1 B1 B1 M1 A1 <u>B1</u> M1 A1 10	<u>In part (a) if acceptable answer seen award the mark and ignore other answers.</u> Accept subtract 12, -12, 'goes down in 12s', etc B0 for n-12, OR -12n + 110 Accept ×5 etc B0 for n×5 or 5n OR 14 notebooks cost (£)9.52, 15 cost (£)10.20 (therefore) 14 <u>OR use of 70p×14 gets M1,A1.</u> <u>F.T. 1000 – 'their 14'×68.</u> B0 for .48p. <u>Changing 4/9 to decimals or percentages will lead to approximations and not to 28. This gets M1,A0</u>

2015 November Paper 2 (Calculator allowed) Foundation Tier	Marks	FINAL MARK SCHEME Comments
8. (a) $2a - b$ (b) 12 (c) Sight of 380 or 260 1 apple weighs $380 - 260 (= 120(g))$ 1 pear weighs $260 - 120 = 140(g)$	B2 B2 B1 M1 m1 A1 8	Mark final answer. Must be an expression. B1 for either term, $2a$ or $-b$ OR $2a + (-b)$ Final answer must be 12 for the B2. B1 for 'Add 7 to get 48' followed by B1 for 'Divide by 4 to get 12' Accept embedded answers. For either reading from the scales F.T. their reading provided 'their 260' is between 200 and 300 exclusive, AND 'their 380' is between 300 and 400 exclusive Follow through 'their values for 380, 260 and 520' C.A.O. A correct solution is awarded all 4 marks
9. (a) a 1278 b 236.43 c 11.82(15) d 248.25(15) (12.46) e 260.71(15) (b) $260.71(15) / 3 = (£)86.90$	B1 B1 B1 B1 B1 M1 A1 7	C.A.O. F.T. 'their a' $\times 0.185$ F.T. 'their b' $\times 0.05$ F.T. 'their b' + 'their c' F.T. 'their d' + 12.46 F.T. 'their e' / 3
10.(a) (£)660 (b) (£)120 (c) Reasonable straight line of best fit (d) Negative (correlation) (e) FT from a 'line of best fit' (reading accurate to small square) (curved line or straight line, not dot-to-dot) H1	B1 B1 B1 B1 B1 5	Some points above and some points below. Do not accept if clearly joining (4, 120) and (0, 660) or corner to corner of the graph paper OR B1 for an answer between (£)260 and (£)320 inclusive only if no line of best fit or if B0 awarded in part (c) Reading accurate to gridline if within a small square, if shown to be on a gridline reading should be accurate

2015 November Paper 2 (Calculator allowed) Foundation Tier	Marks	FINAL MARK SCHEME Comments																																																		
11. (a) <table border="1"><tr><td></td><td>1</td><td>3</td><td>5</td><td>6</td></tr><tr><td>1</td><td>2</td><td>4</td><td>6</td><td>7</td></tr><tr><td>3</td><td>4</td><td>6</td><td>8</td><td>9</td></tr><tr><td>5</td><td>6</td><td>8</td><td>10</td><td>11</td></tr><tr><td>6</td><td>7</td><td>9</td><td>11</td><td>12</td></tr></table> OR <table border="1"><tr><td></td><td>1</td><td>3</td><td>5</td><td>6</td></tr><tr><td>1</td><td>E</td><td>E</td><td>E</td><td>O</td></tr><tr><td>3</td><td>E</td><td>E</td><td>E</td><td>O</td></tr><tr><td>5</td><td>E</td><td>E</td><td>E</td><td>O</td></tr><tr><td>6</td><td>O</td><td>O</td><td>O</td><td>E</td></tr></table> Stephen is more likely to win because EVEN wins 10 times, ODD wins 6 times (out of 16) OR Probabilities : EVEN 10/16 or 5/8 ODD 6/16 or 3/8		1	3	5	6	1	2	4	6	7	3	4	6	8	9	5	6	8	10	11	6	7	9	11	12		1	3	5	6	1	E	E	E	O	3	E	E	E	O	5	E	E	E	O	6	O	O	O	E	S1 B2 E1 B1 E1 B1 E1 8	For any strategy that attempts to derive the sample space. Accuracy of entries. B1 for any 6 correct entries Candidates can get all 4 marks for an explanation that clearly shows that there are more sample entries that are even than odd. (as in the example given in the conference) Correct deduction. F.T. only if at least 13 entries (not all necessarily correct) B1 for any 6 correct entries Candidates can get both marks for an explanation that clearly shows that there are more sample entries that are even than odd. (as in the example given in the conference) Correct deduction. F.T. only if at least 13 entries (not all necessarily correct) F.T. from (i)
	1	3	5	6																																																
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11. (b) <table border="1"><tr><td></td><td>1</td><td>2</td><td>4</td><td>6</td></tr><tr><td>1</td><td>2</td><td>3</td><td>5</td><td>7</td></tr><tr><td>2</td><td>3</td><td>4</td><td>6</td><td>8</td></tr><tr><td>4</td><td>5</td><td>6</td><td>8</td><td>10</td></tr><tr><td>6</td><td>7</td><td>8</td><td>10</td><td>12</td></tr></table> EVEN wins 10 times, ODD wins 6 times (out of 16) so game is not fair (c) (Drawing this table is not required, but can be either of the two types shown in part (a).) <table border="1"><tr><td></td><td>O</td><td>O</td><td>E</td><td>E</td></tr><tr><td>O</td><td>E</td><td>E</td><td>O</td><td>O</td></tr><tr><td>O</td><td>E</td><td>E</td><td>O</td><td>O</td></tr><tr><td>E</td><td>O</td><td>O</td><td>E</td><td>E</td></tr><tr><td>E</td><td>O</td><td>O</td><td>E</td><td>E</td></tr></table> (i) Choice of any two even with any two odd numbers (ii) Rule stated, e.g. '2 even and 2 odd (numbers)'		1	2	4	6	1	2	3	5	7	2	3	4	6	8	4	5	6	8	10	6	7	8	10	12		O	O	E	E	O	E	E	O	O	O	E	E	O	O	E	O	O	E	E	E	O	O	E	E	 	
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14.(a)		<i>If an error is made with $1 - 0.24$ or equivalent, i.e. working with e.g. uniquely 0.66 or 0.86, penalise -1 once only</i>
(Rowena's car depreciated value) $(£)3500 \times 0.76^3$	M2	M1 for 3500×0.76 or $3500 - 3500 \times 0.24$ or 2660, or allow M1 for $3500 - 3500 \times 0.24^3$, or M1 for simple depreciation $3500 - 3 \times 840 (= £980)$ M1 for appreciation 3500×1.24
$(£)1536(.416)$	A1	CAO, but accept 1540 from correct working or a value rounding to $(£)1536$
(Dafydd needs to save a total of $£1536(.416) - £100$) $(£)1436(.416)$	B1	FT 'their 1536' – 100 evaluated correctly provided at least M1 awarded <i>If no marks so far due to working with £3400, then award SC3 for $(£)1492.51(84)$ or $(£)1492.52$, or SC2 for 3400×0.76^3, or SC1 for sight of 3400×0.76 or $3400 - 3400 \times 0.24$ or allow for sight of $3400 - 3400 \times 0.24^3$ or $3400 - 3 \times 816 (=952)$</i>
(Dafydd needs to save, per month $£) 1436(.416) \div 36$	M1	FT 'their 1436(.416)' $\div 36$, i.e. what they think the car is now worth, but do not FT for $3500 \div 36$ or $3400 \div 36$ Note: $£1536(.416) \div 36 - (£)100 \div 36$ is equivalent to B1, M1
$(£) 40$	A2	A1 for $(£)39.88...$ to $(£)39.90(00...)$ FT for A2 provided rounding is necessary, otherwise maximum of FT A1 only. When rounding is necessary, accept rounding up or down to the nearest pound if number of pence is <50 <i>An answer of $(£)43$ is from $(£)1536(.416) \div 36$ evaluated correctly with answer to the nearest £, this is awarded M2, A1, B0, then FT M1 and A2 (or A1 for $(£)42.6(....)$ or $(£)42.70$</i> 'Trial and improvement' method leading to $(£)40$ gets full marks
(b) Conclusion stated or implied with a suitable reason, e.g. 'yes, because he might get interest on his money so have more than he needs', or 'no, because Rowena only estimated the value (and the car could be worth more)', <u>'don't know because Rowena may decide to sell it for more or less than its value after depreciation'</u>	E1	Do not accept contradictions given in the response, <u>unless the candidate is clearly discussing uncertainty.</u> <u>Accept 'don't know' or 'unsure' within a reasoned answer.</u> <u>Candidates need to express uncertainty of depreciation or relate to a rounding of their answer for Dafydd's saving plan</u> <u>Accept 'yes, as Rowena's car could depreciate more than 24% (a year)'</u> <u>Accept 'no' or 'yes' as appropriate with 'Dafydd's saving is rounded to the nearest pound' (yes if rounding was up in (a), no if rounding was down in (a)) or with calculations to show there is less/more in his account than what he thinks he needs, or reverse working to show amount saved $\times 36 < \text{or} >$ depreciated value.</u> <u>Do not accept the statement 'I think the amount Dafydd is saving each month will be enough to buy the car' without a valid reason or calculation(s)</u>
H8	8	

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15. (a) $10y^3 - 15y$	B2	<u>Must be as an expression. Mark final answer.</u> <u>B1 for either term correct OR $10y^3 + (-15y)$</u> A1 for all 3 with at most 1 error OR any 2 correct and no errors <u>If no marks, award SC2</u> for sight of any 2 correct answers with no incorrect answer <u>If no marks, award SC1</u> for sight of any 1 correct answer with no incorrect answer <u>Accept embedded answers</u>
(b) $20h^5$	B1	
(c) $3 < n < 6\frac{1}{2}$ OR $3 < n < 13/2$ OR $n > 3$ with $n < 6\frac{1}{2}$	M1	
$n = 4, 5, 6$	A2	
H7bc	6	